

TAXONOMIC NOTES ON AUSTRALIAN MALVACEAE

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Synopsis

New combinations or changes of rank are made in the genera *Urena*, *Hibiscus* and *Alyogyne*. Three new taxa are described, all in varietal rank. A key to the varieties of *Hibiscus sturtii* Hook. is provided.

Examination of material from Central Australia has brought to light some new taxa, described below, and has indicated the necessity for certain nomenclatural changes.

1. URENA SPENCERI (Ewart) Fryxell, comb. nov.

Hibiscus spenceri Ewart in Ewart & Davies, Fl. N. Terr. 186 (1917).

When Ewart assigned this species to *Hibiscus*, he apparently overlooked its 10 styles and stigmas, which suggest its placement in *Urena*. Other morphological features support the suggestion. The most notable additional features are the elaborate foliar nectaries with prominent yellow borders (cf. Janda, Österr. Bot. Zeitschr. 86 : 81–130, 1937) and the pentamerous involucel, the lobes of which are alternate with those of the calyx. In *Hibiscus* the involucel is only rarely pentamerous (and then not uniformly so), and its divisions are independent of those of the calyx.

Northern Territory : 6 miles out from Daly River, C. S. Robinson R 87, 4 Feb. 1964, (NT 10928) : Cullen River, 40 miles N. of Katherine, N. G. Eddy 214 [with annotation : "Matches TYPE exactly (from Cullen Creek, 5/7/1911, Baldwin Spencer) G. Chippendale 18/1/1960 at Sydney Herb."], 6 Apr. 1958, (NT 5254) : South Plains area, Humpty Doo, D. Tulloch s.n., Mar. 1961, (NT 8030) : Holmes Jungle, 8 miles E. of Darwin, G. Chippendale s.n., 22 Mar. 1961, (NT 7909).

2. HIBISCUS MICROCHLAENUS F. Muell., Fragm. 2 : 116 (1861)

a. HIBISCUS MICROCHLAENUS F. Muell. var. MICROCHLAENUS.

Northern Territory : 10 miles N.E. of Alexandria Station, R.A. Perry, 1480 22 June, 1948 (NT) 1488 (NT) : 30 miles S.S.W. of Wavehill Station, R. A. Perry and M. Lazarides 2224, 21 June, 1949 (NT) : Haast's Bluff, R. E. Winkworth 1389 (NT) : Desert grazing area, Hamilton Downs, G. Chippendale s.n., 23 Sep. 1955, (NT 1749) : Tanami area, A. W. Banks s.n., July, 1948, (NT 2400, 2401) : 18 miles W. of Soudan, G. Chippendale s.n., 29 Mar. 1963, (NT 10659) : 3·2 miles E. of O.T. Downs H.S., G. Chippendale s.n., 11 Mar. 1959, (NT 5511, TAES) : The Granites, J. B. Cleland s.n., 14 Aug. 1936, (ADW 10113).

b. HIBISCUS MICROCHLAENUS F. Muell. var. LEPTOCLADUS (Benth.) Fryxell, stat. nov. *Hibiscus leptocladus* Benth. Fl. Austr. 1 : 214 (1863).

This taxon appears to be only varietally distinct from *H. microchlaenus* (F. Muell. Fragm. 2 : 116, 1861) and is therefore reduced to varietal rank. The two varieties may be distinguished by the length of the involucral bracts (5–9 mm.

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in var. *leptocladus*; 1–2 mm. in var. *microchlaenus*). Also the very short seed hairs of var. *leptocladus* contrast with those of var. *microchlaenus*, which are 2–4 mm. long, and the overall pubescence is greater in var. *microchlaenus*. Var. *leptocladus* occurs from the Victoria River to the MacArthur River and northward; var. *microchlaenus* occurs to the south of this region.

Northern Territory: 30 miles E. of O. T. Station, R. A. Perry 1865, 4 Aug. 1948 (NT): King River, 25 miles S. of Katherine, H. S. McKee 8488, 15 Feb. 1961 (NT): 24½ miles W. of Borroloola, G. Chippendale s.n., 12 Mar. 1959, (NT 5549, TAES).

3. *HIBISCUS KRICHAUFFIANUS* F. Muell. var. *CHIPPENDALEI*, var. nov.

Differet a var. *krichauffianus* pedunculis plus quam triplo longioribus, foliis magis subtiliter serratis, marginis 19–39 serratis vice 7–15 dentatis.

The present variety may be distinguished from var. *krichauffianus* by its much longer peduncles, which are more than thrice as long, and its more finely serrate leaves, the margins of which have 19–39 teeth rather than 7–15 as in the typical variety.

Northern Territory: Rare in grey sandy soil in woodland, 52·2 miles N.W. of Newcastle Waters, G. Chippendale s.n., 18 April 1959, (NT 5826, Holotype); ¼ mile N. of Alice Springs trucking yards, A. Nicholls 519 (NT) 524 (NT) 525 (NT, TAES), 11 May 1967.

4. *HIBISCUS STURTII* Hook. in Mitchell, Trop. Austr. 363 (1848)

Bentham (Fl. Austr. 1863) published five varietal names in *H. sturtii*, thus recognizing the variability of this species. Hochreutiner, in his revision of *Hibiscus* (Ann. Cons. Jard. Bot., Genève 4: 70–71, 1900), differed from Bentham only in raising one of the varieties to specific status as *H. platychlamys* (Benth.) F. Muell. ex Hochr. The taxa recognized by Bentham are well-founded and discrete, but his descriptions are so abbreviated that it is often difficult to determine individual specimens.

The following treatment attempts to differentiate these five taxa more clearly and adds a sixth, var. *truncatus*. Bentham's var. *platychlamys* is provisionally retained in varietal rank.

Key to the varieties of H. STURTII

- A. Plant 1–3 feet tall; all plant parts large, for example: calyx 17–25 mm. long; capsule 12–17 mm. long var. *platychlamys*
- *A. Plant less than 2 feet tall; calyx 6–19 mm.; capsule 8–12 mm. long.
 - B. Pedicel equalling or exceeding petiole; petals purple var. *grandiflorus*
 - *B. Pedicel much shorter than to nearly equalling petiole; petals usually pink
 - C. Calyx equalling involucel var. *sturtii*
 - *C. Calyx exceeding involucel
 - D. Involucel subtruncate, nearly equalling calyx var. *truncatus*
 - *D. Involucel 6–8 toothed
 - E. Involucral teeth acuminate, 3–8 mm. var. *campylochlamys*
 - *E. Involucral teeth triangular, 1–3 mm. var. *muelleri*

a. *HIBISCUS STURTII* var. *PLATYCHLAMYS* Benth., Fl. Austr. 1: 217 (1863)
Hibiscus platychlamys (Benth.) F. Muell. ex Hochr. Ann. Cons. Jard. Bot., Genève 4: 71 (1900).

Pedicels exceeding petioles, 15–50 mm. (rarely shorter). Involucel not equalling calyx, 10–22 mm., 4–6 toothed; teeth acuminate, reflexed, 6–10 mm. Calyx 17–25 mm., deeply 5-lobed; lobes 10–15 mm. Petals 25–35 mm., pink with dark basal spot. Fruits 12–17 mm. long.

Northern Territory: 11 miles W. of Mt. Doreen H. S., G. Chippendale s.n., 9 Feb. 1955, (NT 1231); 14 miles E. of Dalmore Downs, G. Chippendale s.n.,

22 June 1960, (NT 7342, TAES) : 26 miles E. of Mt. Liebig Bore, G. Chippendale s.n., 6 Feb. 1955, (NT 828) : Devil's Marbles, G. Chippendale s.n., 8 Mar. 1955, (ADW 12235, NT 930) : Tanami area, A. W. Banks s.n., July 1948, (NT 2403).

b. HIBISCUS STURTII var. *GRANDIFLORUS* Benth., Fl. Austr. 1 : 216 (1863).

Pedicels equalling or exceeding petioles, 10–22 mm. Involucel not equalling calyx, 4–8 mm., 6–10 toothed; teeth triangular, 1–2 mm. Calyx 8–13 mm., 5-lobed; lobes 3–5 mm. Petals 15–35 mm., purple with dark basal spot. Fruits 8–10 mm.

South Australia : near Halowie Creek, Flinders Ranges, D. E. Symon 3091, 13 Oct. 1964, (ADW 28766) : *Northern Territory* : 4 miles N. of Alice Springs, R. Swinbourne 568, 8 Nov. 1962, (NT 9745) : 9 miles W. of Alice Springs, R. E. Winkworth 894, 16 Mar. 1955 (NT) : hill E. side of Undoolga Gap, G. Chippendale s.n., 9 Nov. 1954 (NT 430) : 16 miles S.E. of Alice Springs, R. E. Winkworth 684, 9 Nov. 1954 (NT) : 20 miles SE of Ringwood Station, Simpson Desert, R. A. Perry 5459, 9 Sept. 1955 (NT).

c. HIBISCUS STURTII var. *STURTII*

Pedicels shorter than petioles, 4–7 mm. Involucel equalling calyx, 6–8 mm., ca. 8-toothed; teeth rounded-triangular, $\frac{1}{2}$ –2 mm. Calyx 6–8 mm., 5-lobed; lobes $\frac{1}{2}$ –2 mm.

Northern Territory : Haast's Bluff Reserve, J. B. Cleland s.n., 29 Aug. 1957, (ADW 18462, NT 4016).

d. HIBISCUS STURTII var. *TRUNCATUS* var. nov.

Pedicelli 3–6 mm. longi, quam petioli breviores. Involucella truncata vel subtruncata, 6–10 mm., quam calyces aliquantum breviora. Calyces 9–12 mm., 5 lobati; lobi calycum 2–3 mm. Petala erubescens, basi sine maculis atratis, 15 mm. longa. Fructus 8 mm. longus.

Pedicels shorter than petioles, 3–6 mm. Involucel somewhat shorter than calyx, 6–10 mm., truncate or subtruncate. Calyx 9–12 mm., 5-lobed; lobes 2–3 mm. Petals 15 mm., pink, without dark basal spot. Fruits 8 mm.

Northern Territory : Tropic of Capricorn, 13 miles S. of Kintore Range. Erect, perennial herb, 6" high, flowers pale pink. Rare on roadway across deep red sand plain. D. J. Nelson 973, 12 Mar. 1964, (NT 10857, Holotype) : 27 miles W. of The Granites, A. W. Banks s.n., July 1948, (NT 2402).

e. HIBISCUS STURTII var. *CAMPYLOCHLAMYS* Benth., Fl. Austr. 1 : 217 (1863)

Pedicels shorter than petioles, 2–10 mm. Involucel not equalling calyx, 7–14 mm., 6–8 toothed; teeth acuminate, 3–8 mm. Calyx deeply 5-lobed, 13–19 mm., lobes 10–12 mm. Petals 20–25 mm., pink or purple with dark basal spot. Fruits 8–12 mm.

Northern Territory : 3 miles S. of Daly Waters turnoff, G. Chippendale s.n., 10 Mar. 1955, (NT 1051) : 21 miles from Newcastle Waters, R. E. Winkworth 1060, 23 Mar. 1955 (NT) : 51 miles S. of Hooker's Creek Settlement, G. Chippendale s.n., 14 July 1956, (NT 2322) : 105 miles W. of Muckety (Long. $132^{\circ} 29'$, Lat. $18^{\circ} 30'$), H. A. Johnson s.n., 1 June 1965 (NT 11757) : 10 miles W. of Wonarah Telegraph Stn., G. Chippendale s.n., 25 Mar. 1956, (NT 1979).

f. HIBISCUS STURTII var. *MUELLERI* Benth. Fl. Austr. 1 : 217 (1863)

Pedicels shorter than petioles, 2–10 mm. Involucel not equalling calyx, 4–8 mm., 6–8 toothed; teeth triangular, 1–3 mm. Calyx 5-lobed, 7–12 mm., lobes 3–5 mm. Petals pink without dark basal spot, 10–20 mm. Fruits 8–9 mm.

New South Wales : Broken Hill, South Hills, A. Morris s.n., 3 Apr. 1921, (ADW 7922) : *Northern Territory* : Winnecke Creek, 50·3 miles S.W. of Hooker Creek Settlement, G. Chippendale, s.n., 14 Apr. 1959, (NT 5724, TAES) : Storm Creek, 160 miles S.W. of Alice Springs, G. Chippendale s.n., 24 Nov. 1955, (NT 595) : Tobermorey, No. 7 bore paddock, G. Chippendale s.n., 2 Oct. 1954,

(NT 408) : ca. 2 miles W. of sewerage farm, Alice Springs, 11 May 1967, A. Nicholls 541 (NT, TAES).

5. *ALYOGYNE HUEGELII* (Endl.) Fryxell, comb. nov.

Hibiscus huegelii Endl. in Huegel, Enum. 10 (1837).

The features that distinguish *Alyogyne* from *Hibiscus* and allied genera include : a copious development of endosperm enclosing a correspondingly smaller and simpler embryo ; the form of the involucel ; and the structure of the flower. The anther mass is columnar in form, and rather narrowly so, as a result of having a columnar androecial column and filaments of equal length emerging from the column. The anthers are a characteristic rusty colour. The style is undivided. The corolla is a characteristic mauve. These several traits taken together indicate the necessity of transferring the present species to the genus *Alyogyne*, as suggested by Bates (Baileya 13 : 69, 1965), as well as the following species, which shares these traits.

Western Australia : Mr. Ashby's garden, originally from Geraldton, G. H. Clark s.n., Oct. 1937, (ADW 3810A, 3810B), E. Ashby s.n., 17 Dec. 1932, (ADW 1599) : *South Australia* : Lower Mambray Creek, Flinders Range, D. E. Symon 459, 11 June 1960, (ADW 22154) : Lower Eyre Peninsula, A. E. Ophel s.n., Nov. 1939, (ADW 6654) : Pt. Germain, Lower Flinders Ranges, A. Morris s.n., 5 Sep. 1916, (ADW 17674) : 3 miles along road to Koppio from turnoff along the Tunsby-Lincoln road, 14 km from Tumby Bay, Lower Eyre Peninsula, D. E. Symon 908, 12 Nov. 1960, (ADW 22731) : head of Monnabie, (Mr. Moulds) part of Cooyerdo Stn., S. of the Whyalla-Kimba road, W. S. Reid s.n., 2 Feb. 1962, (ADW 27924).

6. *ALYOGYNE PINONIANUS* (Gaud.) Fryxell, comb. nov.

Hibiscus pinonianus Gaud., Voy. Freyc. 476, t. 100 (1826).

a. *ALYOGYNE PINONIANUS* (Gaud.) Fryxell var. *PINONIANUS*.

South Australia : Mt. Moulden, between Blyth Range and Deering Hills, W. S. Reid s.n., 26 Sep. 1955, (ADW 19247) : *Northern Territory* : 2 miles S. of Lake Amadeus G. Chippendale s.n., 29 June 1959, (NT 6398, TAES) : 18½ miles N. of Lake Amadeus, G. Chippendale s.n., 28 June 1959, (NT 6357, TAES) : Petermann Range area, 7½ miles W. of Shaw River, G. Chippendale s.n., 24 June 1958, (NT 4636) : 25 miles S. of Angus Downs H.S., G. Chippendale s.n., 24 Nov. 1954, (NT 627) : near Warburton Mission, near Mt. Charles, H. A. Johnson s.n., 16 May 1958, (NT 5129).

b. *ALYOGYNE PINONIANUS* (Gaud.) Fryxell comb. nov. var. *MICROANDRUS* Fryxell var. nov.

Differ a var. *pinonianus* statura minore, petalis minoribus (usque ad 3 cm. longis), basi sine maculis, filamentis quadruplo brevioris (usque ad ½ mm. longis), stigmatibus tantum 1 mm. diam., sed fructibus et seminibus idem.

The present variety may be distinguished from var. *pinonianus* by its smaller stature, its smaller petals (to 3 cm.) which lack a basal spot, its shorter filaments (to ½ mm.) that are one-fourth the length of those of the typical variety, and its smaller stigma of only 1 mm. diameter. In spite of the reduced flower parts, the fruits and seeds are of similar size.

South Australia : Eyre Peninsula : roadside near Midgee Rocks, on road to Mitchelville, N.E. of Cowell, R. Pearce s.n., Feb. 1965, (ADW 29591, Holotype ; CANB, Isotype, n.v.).

It is possible that *Hibiscus drummondii* Turez. (= *H. intraterraneus* Black) also belongs in *Alyogyne*. Bates (loc. cit.) suggested that *Hibiscus farragei* F. Muell. might be allied to *Alyogyne*, but I disagree. The embryo structure of *H. farragei* is quite distinctive and is unlike the majority of Malvaceae in that it is straight. If this species is to be removed from *Hibiscus*, its more natural position would seem to be in or near the genus *Radyera* Bull. (= *Allenia* Phill. non Ewart).